GEOGRAPHIC SCHOOL BULLETINS

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GEOGRAPHIC SCHOOL BULLETIN

HOW TEACHERS MAY OBTAIN THE BULLETINS

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Mountains Frame Salt Lake and Plain in Disputed Azerbaijan

LOFTY mountains, a great salt lake, and a fertile plain—those are the contrasting natural features of the frontier region of northwestern Iran (formerly Persia), whose Azerbaijan Province has been a postwar trouble center of the Middle East. A reason for the Soviet Union's interest in the area is believed to be the possibility that it may become a producer of oil.

The mountains are part of the range extending between the Caucasus and the Persian Gulf. Across the Iranian borders they reach north into the Armenian and Azerbaijan republics of the Soviet Union and west into Turkey and Iraq.

Lake as Large as Delaware Near Turkish Border

Some of the snowy peaks in this part of Iran are nearly two and a half miles high, but the northern mountains have not served as frontier barriers. On the contrary, passes between eastern Turkey and northern Iran for centuries have been an avenue of both commerce and invasion in the Middle East.

The salt lake, largest in Iran, is Lake Urmia, a shallow, shrinking body of water whose western shore is about 35 miles east of Turkey. Lake Urmia normally is about the size of Delaware, although heavy rains and movements of the earth's crust frequently cause its shape and size to change. Fed by mountain streams and having no outlet, it is three-fifths as salty as the Dead Sea, so saline that fish cannot live in its blue waters. At its largest it nearly equals Utah's Great Salt Lake in area.

Around the lake is a rolling basin ten times as extensive as the water itself, where fields of grain and tobacco, orchards of apricot, peach, and plum trees, and vineyards thrive. In fact, Iran's Azerbaijan Province, which stretches from Turkey almost to the Caspian Sea, is one of the finest agricultural regions in the country.

The province supports more than a million and a half people, including such nomadic tribes as the Kurds, who live in black goat-hair tents, and pasture their flocks on the mountain slopes. A movement among Kurds of three nations—Iran, Iraq, and Turkey—to form an autonomous state has been reported. Often in the past these independent tribesmen have caused trouble for their rulers.

Tabriz, Azerbaijan Capital, Retains Ancient Ruins

Principal city of northwestern Iran is Tabriz (illustration, next page), situated east of Lake Urmia about 50 miles south of the Soviet boundary. Bazaars filled with Persian rugs, silks, silver work, pottery, and dried fruits made it one of the ancient trading centers of Asia. Although the opening of the Suez Canal and other water trade routes caused Tabriz' commerce to decline, the city still is the second largest in Iran. The half-million inhabitants of its heyday have dwindled to 219,000.

Tabriz, 4,000 feet above sea level, has a healthful climate. Cold weather persists for four months of the year. Devastated many times by earthquakes, the city still retains within its sun-dried brick walls many ruins, the most conspicuous being that of a 600-year-old citadel. The Kabud Masjid (Blue Mosque) is renowned for its beautiful tile faïences (decorative earthenware).

Mules, horses, camels, porters, and carts crowd one another for space in the

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AP from Press Ass'n.

WHEN DIKES BREAK, TAWNY WATERS POUR FROM THE YELLOW RIVER BED (LEFT) AND CHINESE WORK LIKE ANTS TO CLOSE THE GAP

Soldiers and farmers toil together in China's ancient but effective method of repairing dike breaks. They place bale after bale of kaoliang stalks at either side of the gap, slowly damming the outflowing waters. Kaoliang, resembling sugar cane, is grown extensively in North China's Great Plain, as it does not die quickly when flooded. Dikes are necessary along the lower Hwang Ho because the river is higher than the adjoining country (Bulletin No. 3).

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In Britain's Seychelles Colony, French Influence Lingers

SODA fountains, fizzing in response to "I'll take vanilla," may be indebted for the popular flavor to the little-known Seychelles Islands, British colony off Africa's east coast. Strewn over a 550-mile path in the Indian Ocean as though tossed by a giant's hand from Madagascar northeast toward Bombay, the Seychelles have an estimated area of 156 square miles. This includes several outlying islands and groups which are dependencies of the colony, among them the Aldabra, Cosmoledo, and Farquhar islands.

Mahé, largest of the Seychelles, has more than a third of the land. It is 17 miles long and its width varies from four to seven miles. Praslin, second in size, is eight miles long and from one to three miles wide. It is the chief source of Seychellois vanilla. Silhouette has an area of eight square miles, and La Digue four. None of the other islands are more than 1½ miles in length.

Portuguese First Charted the Seychelles Islands

There is little level land on the islands, most of which are granite fringed with coral reefs. Two mountains on Mahé—Morne Seychellois and Trois Frères—rise nearly 3,000 feet. Swift streams dash down their sides, and the island has plenty of water.

Although just south of the Equator, the Seychelles have an even, healthful climate. Temperatures on the coast range from 68 to 88 degrees Fahrenheit during the day, and at night breezes from the mountains cool them to 55 or 60 degrees. Yearly rainfall is 100 inches on the coast, higher in the mountains.

The Seychelles appeared on Portuguese maps of 1502. A century later a British ship paid the first recorded visit to the group. In 1744 the French annexed the islands, which they later named for Vicomte de Séchelles, comptroller of finance under Louis XV. The British captured the islands in 1794 and their ownership was confirmed in 1814 by the Treaty of Paris.

Intricate channels giving access to some of the islands made them fine pirate lairs. Later the French founded on Mahé (illustration, next page) the first permanent settlement. Secretly, they cleared patches of jungle and set out spice plantations with the idea of competing with the Dutch in the profitable spice trade. African slaves, brought by the planters from Mauritius, comprised the majority of the early settlers. Later, like Liberia, the Seychelles became a haven for freed slaves. Except for British colonial officials—active and retired—and Chinese merchants, the population of 34,000 is made up of descendants of French settlers—with a slight British strain, and of African slaves and Indians, the latter chiefly from the Malabar Coast.

Two-Thirds of Islands' People Live on Mahé

French traditions and customs linger. The Napoleonic Code is still in use. The language is based on French, with a liberal admixture of English, Indian, and Bantu words. Legal forms are in French. One newspaper at Port Victoria (the capital, on Mahé) is printed in French; part of the English paper is in French.

More than two-thirds of the islanders live on Mahé. Port Victoria, that island's chief city, is one English colonial capital where cricket and golf are not played. Football is popular, and fishing is a favorite sport. The town has a Church of England cathedral and a Roman Catholic cathedral, a Carnegie Library,

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narrow streets of Tabriz. Unveiled women and men wearing ill-fitting European clothes mingle with Iranians and Afghans in native costumes. Unlike the mud homes of the native sections, the foreign-quarter houses are large and beautiful, with lovely gardens surrounding them.

Westward from Tabriz, smaller communities outline the Lake Urmia basin. Maragheh (Maragha), southeast of the lake, was a celebrated center of Mongol power in the 13th century. Farther south, Miyanduab, whose name means "between two rivers," stands on a sun-baked plain.

North of the lake, Marand and Khoi are on a main channel of communication to Turkey. Marand also is on the railroad which connects Tabriz with the Soviet line just across the Armenian border. The Iranian route has a branch to the northeastern shore of Lake Urmia at Sharifkhaneh, where motor boats take passengers across the lake to the vicinity of Rizaiyeh (Urmia), the reputed birthplace of Zoroaster, founder of the ancient Persian religion.

Until 1826, when tsarist Russia conquered it, the region of Soviet Azerbaijan belonged to Persia (Iran). The Iranian Province of Azerbaijan, a little larger than South Carolina, is peopled by Turks, Syrians, and Armenians, besides Iranians and Kurds.

In Turkey, near the three-way corner of the Soviet Union, Iran, and Turkey, rises Mt. Ararat, traditional resting place of Noah's Ark.

Note: Iran is shown on the National Geographic Society's Map of Asia and Adjacent Areas. A price list of maps may be obtained from the Society's headquarters, Washington 6, D. C.

See also "Iran in Wartime," in the *National Geographic Magazine* for August, 1943; "Along the Old Silk Routes," October, 1940; and "Old and New in Persia," September, 1939. And in the GEOGRAPHIC SCHOOL BULLETINS, December 10, 1945, see "Revolution in Iran May Retard Its Postwar Plans."

Bulletin No. 1, April 8, 1946

Thomas L. Kirkpatrick

THE TABRIZ VERSION OF THE ROADSIDE HOT-DOG VENDER SELLS BARBECUED LAMB AND MUTTON

Marco Polo, visiting Tabriz in the 13th century, called it a city where "the merchants make large profits." Whether or not this open-air restaurant owner makes money, he seems to enjoy his work. Lamb spitted on iron skewers is cooking over a charcoal fire. With the fan in his left hand, he keeps the coals hot.

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China to Restore Hwang Ho (Yellow River) to Prewar Course

WITH a small army of coolie laborers, UNRRA is undertaking to restore the Hwang Ho, northern China's Yellow River, to its prewar course so that it will again flow into the Po Hai (Gulf of Chihli). Since 1938, when the dike was breached about 400 miles from the mouth to flood the advancing Japanese army and the river changed its course (map, next page), the Yellow Sea has received its muddy water 270 airline miles to the south. The flood drove the Japanese from 500 square miles of territory.

If it flowed in a straight line, the Hwang Ho would be long enough to extend from New York City to San Francisco. It is one of the world's mightiest rivers, and is often referred to as "China's sorrow" because of its severe floods. For its last 500 miles the Hwang Ho's bed, being constantly raised by its own silt, is several feet above the level of the plain. Ever higher dikes must keep the river in check. When they break, tawny water cover entire districts.

River Water Is 40 Per Cent Silt

Through the centuries the flood waters of the Hwang Ho have destroyed untold millions of lives. At the same time its floods and shifting course have built up much of China's Great Plain, filling in an arm of the Yellow Sea with level farm land. Like the Nile, its floods fertilize vast areas to create the most productive of China's grain fields, which supply food for 50 million Chinese.

As soon as the river covered one section with loess from the inland hills and other silt from as far away as the mountains of Tibet, it shifted to fill in lower land. The river's silt load at times runs as high as 40 per cent by weight.

A railway was built up the river valley, but it has been dismantled for long stretches. The lower river is of little value for transportation, and, unlike the Yangtze, no large cities have developed along its banks, for it destroys settlements in their youth. Towns avoid the Hwang Ho as Italian towns avoided the diked and flooding Po River. Unhurried boatmen drift with the current when going downstream and wait for favorable winds to carry them upsteam. Two methods of inviting sail-filling winds are used: a shrill whistle for the gods to hear, or the burning of paper cash on the foredeck for the gods to see.

Rising in Tibet, at an elevation of about 13,500 feet, the Hwang Ho develops considerable potential water power as it passes through mountain valleys and deep gorges, but so far this power has not been harnessed. It is estimated that Hu-kou Falls alone could develop 50,000 to 100,000 horsepower most of the year. At low stage, the water falls 65 feet in a single drop, plus a 45-foot fall in rapids within a mile.

Farmers Keep Rowboats as Flood Insurance

Except for occasional sandy areas, the river banks along the plain are lined with small farms on which primitive plows, shovels, and hoes produce quantities of grain (principally wheat), cotton, beans, cucumbers, onions, garlic, melons, and big radishes—all Chinese favorites. Produce is brought to market in two-wheeled carts or wheelbarrows, or on long shoulder poles.

Near most riverside farmhouses are upturned boats to float the family and salvaged goods when a flood comes. Inundated families flock to the dikes (illus-

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and two hotels, in addition to the government buildings.

Most of the native Negroes choose an easy-going life on plantations, tending small garden plots and fishing. They eat rice, fish, fish-head soup, breadfruit, and bread made from manioc—the meal ground from the cassava root.

The Negro women carry everything but their babies on their heads. Their peculiar pastime is long-distance conversation. Two women approaching each other may begin a conversation when a hundred feet apart. They pass without stopping, and without turning their heads, continue to talk until out of earshot.

Many natives live in one-room huts with roofs of coconut-palm thatch or of galvanized iron. Larger huts may be divided into two rooms by a palm-leaf partition. Even the better homes often have sheet-iron roofs as this material withstands the dampness and heat better than shingles.

Houses are built on stone pillars to prevent flooding by the torrential rains. The natives sleep on the floor. Most of the better homes are of the bungalow type, made of hardwood. Most of the government and business buildings are made of island stone. In Port Victoria buildings are electrically lighted. Mahé has good, though narrow, roads, with scenic drives of spectacular beauty.

Seychelles' chief exports are coconut-palm products, with cinnamon next in importance. Normally, most of the cinnamon is shipped to the United States. Exports of vanilla beans amount to several thousand pounds annually. The islands are famous for their tortoises, and much shell is exported; also guano from deposits on many of the small rock islets.

The island of Praslin is the home of the coco de mer, or double cocount palm, but Mahé has the most extensive coconut plantations. Planters are annoyed by rats that live in the trees and eat the green coconuts. Tree snakes catch the rats, but they also eat chickens.

Note: The Seychelles Islands are shown on the Society's Map of the Indian Ocean.

Bulletin No. 2, April 8, 1946

Rodney C. Wood

COCONUT AND CINNAMON TREES GIVE SEYCHELLES ITS TOP EXPORT PRODUCTS

With a sea of waving palm trees below them and the Indian Ocean beyond to serve as a backdrop, workers on a Mahé cinnamon plantation pose for a picture. Huge boulders, outcroppings of the island's granite base, are their pedestals. Across the narrow stretch of water small islands rear palm-crowned heads. Largest and nearest is Cerf, which has the best pasture land in Seychelles. It is a quarantine station for cattle.

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Soybean Products Diversify U.S. Menus and Enrich Diets

IT HAS been said that the only nutritive shortcoming of soybeans is that, to get the good from them, the beans in some form must be eaten. This statement sweepingly sums up the reluctance of many Americans to regard soybean products as table foods to be taken seriously.

No longer a novelty in the United States, the Chinese-import crop is lauded as a soil restorer, as stock feed, as a versatile source of plastics and other commercial commodities, and as the chief ingredient in many vegetable shortenings. But wartime use of many soy products as substitute foods gave them an "ersatz" reputation which the "meat-and-potatoes" public may find hard to forget.

From Soup to Nuts with Soybeans

The Department of Agriculture, in publications and through efforts of its extension workers, is gradually overcoming the natural aversion of Americans to this new food, and at the same time is emphasizing soy's nutritive values.

Menus are offered to supply every part of a full-course meal—from soup to nuts. Soybean soup is made from either whole or mashed beans, flavored with ham, bacon, or other meats, and thickened with mixed vegetables. Soybean flour and grits are used as "meat extenders" in such entrees as soybean meat loaf and soybean scrapple. Bread or golden-brown biscuits containing soy flour and a salad of soybean sprouts add to the meal. For desserts soy fanciers can offer soy apple-sauce cake, soy brownies, soy sugar cookies, or soy apple betty. The final fillip could be—not salted nuts, but salted soybeans.

The proper type of soy must be used in the preparation of these foods. Vegetable varieties are served as garden beans and green vegetable beans, and as such are canned and frozen. Field soys are used in flour manufacture and for sprouts. As a garden green bean and as a dry bean for cooking or baking, the vegetable soy is superior to the field variety.

There is as much difference in the two soybean types as in field corn and sweet corn. Home demonstration agents are quick to point this out at the beginning of a demonstration. Many hundred of varieties of soybeans are known, as they have been cultivated for thousands of years.

Known even before the Pyramids began to rise from the sands of Egypt, soybeans came to America from China in 1804. They were tossed aboard a United States-bound sailing ship as emergency food for the crew. The first written record of the existence of these beans was made in 2838 B.C. by a Chinese emperor.

Newcomer Crop Now Spreads over 11 Million Acres

In parts of China they have been both meat and milk. This "Chinese cow"—as the soybean is often called—has nourished children for centuries. The "milk," extracted by a simple process of soaking and boiling the ground-up beans in water, is rich, creamy, and high in food value. Manchuria and Japan (illustration, next page) grow and use huge quantities of soybeans.

Rise of the soybean in the United States has been one of the most spectacular in the agricultural field. In the early 1900's only a few thousand bushels were grown on scattered farms as feed and fertilizer. Now the crop covers more than 11 million acres, with annual production nearly 200 million bushels. Only five

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tration, inside cover), where they remain until the waters subside. They then start farming again, from scratch.

Most of these small farmers live in huts of sun-dried brick or mud. There is no lumber in this fertile plain with which to build, no fuel with which to fire brick. Burned brick is reserved mostly for the wealthy farmers, for the homes of officials, and for temples. In the mountain regions upstream, many of the people make their homes in caves.

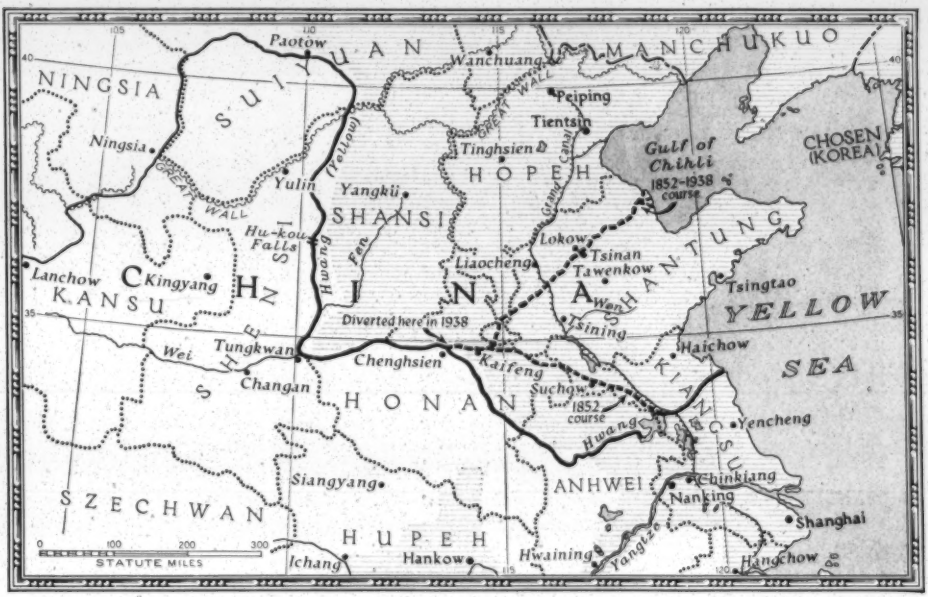
The Chinese along the river have developed a great fatalism regarding the inevitability of floods. Yet they work on, year after year, fondly hoping that this year there will be no flood, that the dikes will break below them. When waters recede, they creep back to their farms and villages to find them half buried in silt, start digging out their homes, and begin putting in a new crop a few inches higher than the last one. While flooded out, they wander for hundreds of miles over the non-flooded countryside looking for food or work. Or they live in temporary stringtowns along the dike, sometimes reduced to staving off starvation by eating corncobs, peanut shells, tree bark, locusts, and even the "good earth" itself.

American engineers, bringing new methods and devising new variations of old Chinese tactics, succeeded between the wars in lessening the danger of flood. However, serious inundations occurred in 1935 and 1938.

Note: The course of the Hwang Ho is shown on the Society's Map of China.

For further information, see "Taming 'Flood Dragons' Along China's Hwang Ho," in the *National Geographic Magazine* for February, 1942; "From the Mediterranean to the Yellow Sea by Motor," November, 1932; "Raft Life on the Hwang Ho," June, 1932; and "Seeking the Mountains of Mystery," February, 1930.

Bulletin No. 3, April 8, 1946



THE YELLOW RIVER, LOYAL TO CHINA, HELD THE JAPANESE (SHADED AREA) AT BAY THROUGHOUT MOST OF THE WAR

In 1938, Nipponese forces after taking Kaifeng were set to capture Chenghsien, important railroad junction. The Chinese turned loose the "flood dragons" of the Hwang Ho by breaking the dike between the two cities. The river poured southeastward, finding a new course to the sea and cutting off the Japanese from central China. The broken line reaching to the Gulf of Chihli was the previous course; the lower broken line, an even older course. Chinese and American engineers now direct the work of putting the river back in its prewar bed.

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Geo-Graphic Brevities

PARAGUAY'S RIVERS AID LOGGING BUT HARDWOOD LOGS WON'T FLOAT

FORESTRY experts of the United States Government have arrived in South America's inland republic of Paraguay to confer with officials on a program for the commercial and industrial utilization of rich forestry resources. A third of the country is virgin forest, and lumbering is one of the principal industries. Paraguay's area of 153,000 square miles makes it almost the size of California.

Wood is of primary importance in Paraguay because of the lack of other fuel. It powers steamships and 700 miles of railroad, as well as Paraguayan factories which produce shoes, soap, sugar, flour, cotton fabrics, and canned goods.

In forested countries it is customary to float logs down streams. Much of Paraguay's wide variety of hardwood will not float, however, and heavy logs are drifted by attaching three lighter logs to each. This is true of logs of quebracho, a name that means ax-breaker. Paraguay uses some quebracho to make wheels six feet and more in diameter for two-wheeled carts and for hauling logs over mud roads. Quebracho logs are converted into street-paving blocks, piles for bridge construction, and fence posts.

Much of the quebracho is chopped up for the extraction of tannin. Quebracho extract is an unusually effective agent in tanning leather, and Paraguay annually shipped four million dollars worth before the war, the United States taking about a quarter of the supply.

The quebracho trees are scattered throughout the Chaco, Paraguay's "wild west" of nomad Indians where colonizing projects are in operation. The Chaco, equalling Tennessee and Alabama in area, is that part of Paraguay west of the Paraguay River. It is a flat country of many lagoons where floods and droughts alternate. Herds of cattle graze as far inland as the jungle is cleared.

Most Paraguayan farms are small clearings in the timberland of Paraguay proper between the Paraguay and Alto Paraná rivers. The output of sugar cane, peanut oil, cottonseed oil, and various vegetables and grains is for domestic consumption.

Forest products and other commodities are shipped down the Paraguay and Paraná rivers, over which bi-weekly service is normally maintained, between the capital city, Asunción, and Buenos Aires. The rivers remain Paraguay's principal highways, carrying hides, yerba maté (illustration, cover), cotton, quebracho extract, and canned meats. The United States has imported over half a million dollars worth of the canned meat in a year.

Except in periods of low water, Asunción is the upstream terminus of navigation for the larger steamers carrying exports to Buenos Aires, a thousand miles downstream. The capital, on the east bank of the Paraguay River, has a population of 120,000. It resembles an Old World city behind the red bluff promontory forming the river harbor.

* * * *

BORNHOLM ISLAND, RETURNED TO DANISH CONTROL, IS DENMARK IN MINIATURE

BORNHOLM, the Danish island in the Baltic Sea which Soviet occupation troops have recently evacuated, is a sort of "Denmark in a nutshell." It is roughly rectangular and about one-sixth as large as Long Island. With its 225 square miles of territory and 45,000 inhabitants, it repeats many of Denmark's characteristics in miniature.

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crops—corn, wheat, hay, oats, and cotton—occupy more land in the United States. Illinois, Indiana, North Carolina, Missouri, and Iowa are the leaders in acreage.

Nutritionally soybeans are probably most important for their protein content—two and one-half times as high as that of steak. Protein in food is the raw material for building muscle and other body tissues. Soybeans contain about 40 per cent of this material. Its quality is superior to other vegetable proteins and comparable to that of animal proteins (meat, eggs, milk, and cheese). Other important elements in the soybean include calcium, phosphorus, iron, and the B complex vitamins. Vitamin values compare with those in wheat and meats.

Farmers raise soybeans in their fields as a forage crop, a grain crop, or simply to enrich the soil. Soy is a leguminous plant; the leaves take nitrogen out of the air and deposit it in nodules clinging to the roots. Plowed under, the rank, leafy plant adds even more nitrogenous humus to the soil.

Soybeans contain an average 19 per cent oil. This is used in making rubber hose and mats, soaps, paints, lacquers and varnishes, linoleum and oilcloth, and margarine and vegetable shortenings.

Bulletin No. 4, April 8, 1946

Cabot Coville

A JAPANESE SLICES GRINDSTONE-SHAPED SOYBEAN CAKE FOR FERTILIZER

In Japan the waste products of the versatile soybean are used. After edible elements have been extracted, the residue is pressed into cakes. Shaved off and spread over fields, this wallboardlike material makes good cheap fertilizer for the overworked land. A sharp edge at the bottom of the disk cuts off bits as the man pushes down.

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During V-bomb attacks on England, German scientists were reported to be using Bornholm as a base for experiments in handling and launching those long-distance missiles. After Germany's surrender, a die-hard German garrison held out on the island until the Russians landed.

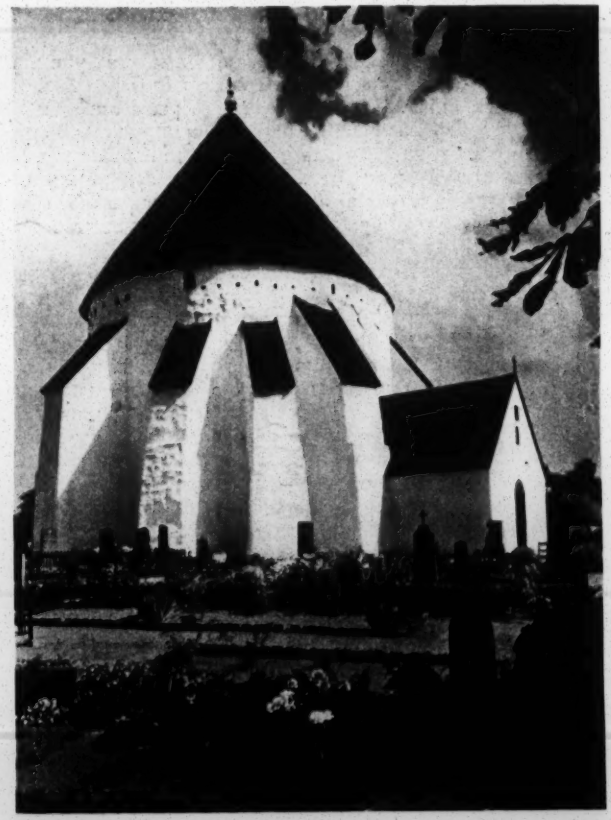
Bornholm, with adjacent islets, is the easternmost outpost of Denmark. It is 85 miles from the rest of the Danish islands, only 25 miles from the Swedish shore, and 60 miles from the coast of Germany. But Bornholm people are of Danish blood and have been closely linked with Denmark for a thousand years.

Almost surrounded by rocks, Bornholm is a sturdy chunk of granite, below a generally fertile soil. Before the Germans took over in April, 1940, the islanders supplied much of their own needs through farming and fishing. An outstanding product of the fisheries was the "Bornholmer," a tasty herring smoked by a special process. Bornholm also raised sheep and cattle, and produced considerable butter, milk, and cream. Some industry, including pottery making and the quarrying of stone, was carried on.

A Bornholm farmer who failed to make a living from crops could dig deeper and quarry the granite which normally provided a leading material for export as well as for the island's own hard roads and solid buildings.

Peacetime Bornholm had become a popular vacation spot, especially for compatriot visitors from Denmark proper. Its medieval round churches (illustration, right), ancient monoliths, ruined castles, and stump windmills were favorite subjects for camera enthusiasts and Denmark's many artists.

A feature of many Bornholm houses which may have come in handy during German occupation is the "curiosity mirror." Set outside a window, this adjustable glass reflects the happenings on the street for the benefit of the observer hidden indoors.



BORNHOLM'S ROUND CHURCHES WERE ONCE PIRATE-PROOF

Four such cylindrical places of worship stand on Denmark's Baltic Sea island. Built as churches, they became forts when pirates swarmed ashore in the Middle Ages. This one, Osterlars Kirke, added buttresses and gabled entranceway later. Early interior murals, now restored, were once whitewashed out of sight by strait-laced Lutherans.

Note: Bornholm appears on the Society's Map of Germany and Its Approaches.

See also, "Bornholm—Denmark in a Nutshell," in the *National Geographic Magazine* for February, 1945.

Bulletin No. 5,
April 8, 1946